The REX system – your all-in-one solution

DC 24 V protection and distribution

IO-Link
Modbus-RTU
The REX system – your all-in-one solution

Supply
Central power input in DC 24 V applications has never been so easy. Plus or minus supply, conventional or intelligent - the EM12 modules are a vital part of the REX all-in-one solution. They are tailor-made to the requirements of machines and panel builders and no further accessories are required for the mechanical connection of the individual components. This helps save time and money!

Overcurrent protection
Modern overcurrent protection with globally unique features - this is the REX12 electronic circuit protector. It is available as a single or double channelled model and can therefore ideally be adjusted to any application. In addition, it is electrically connected by means of a connector arm without any further accessories. Conventional or smart - selective overcurrent protection can be so easy...
The PM12-T power distribution concept of the REX system can very easily be divided into two main groups. In the same system, the user can easily realise not only the +DC 24 V distribution, but also the minus distribution 0 V (GND).

Your benefits

- Increases machine uptime – through clear failure detection, high transparency and remote diagnosis
- Provides flexibility through ease of assembly or disassembly, modular design and convenient adjustment
- Saves 50 % time – through innovative and flexible connection technology
- Saves cost – as no further accessories are required
- Saves space – because each module has a width of only 12.5 mm

E-T-A’s compact and flexible REX system represents a comprehensive DC 24 V protection and distribution solution for machine and panel builders, under the headline »all in one«.

It is a perfectly matched system, available from one source. In spite of of the optimised functionalities, the REX12 product group requires amazingly few components while offering considerable time and cost savings.
The REX system – the supply modules

Supply

The EM12 supply modules for the power input of the REX system are available in different versions, providing true flexibility in terms of cost and functionality. Besides the conventional EM12-T01-... supply modules with integral group fault signalling by means of a relay contact, there are also the intelligent and communication-capable EM12D-TIO-... supply modules for IO-Link as well as EM12D-TMB-... for Modbus-RTU. They provide diagnostic information about the superordinate IO link or Modbus-RTU master as a basis for proper remote maintenance.

In addition we have supply modules for further potential line entries. In this process the EM12-T00-100-... supply module connects all +DC 24 V points of supply. The EM12-T00-200-... supply module serves as a +DC 24 V disconnect terminal for the input of battery-buffered or even safety voltage potentials.
ControlPlex®
EM12-TIO-000-DC24V-40A,
supply module, COM, IO link

ControlPlex®
EM12-TMB-000-DC24V-40A,
supply module, COM, Modbus-RTU

EM12-T00-000-DC24V-40A,
supply module, standard,
without auxiliary contacts

EM12-T01-001-DC24V-40A,
supply module, standard,
auxiliary contact N/O

EM12-T00-100-LINE-40A
supply module, mid/right,
LINE connected

EM12-T00-200-LINE-40A
supply module, centre,
LINE separated

At a glance

EM12 supply modules ensure flexibility in the planning process.

- Versions with in-built communication components significantly increase system transparency
- All supply modules are designed for DC 24 V and a total current of 40 A
The REX system –
the overcurrent protection

The REX12 electronic circuit protector combines flexibility and compact design – in a single or double channel version, conventional or smart or even with IO link or Modbus-RTU. REX12, this means a space-saving and reliable protection, designed for primary pulsed DC 24 V switch mode power supplies. The focus is on the stable operation of switch mode power supplies, easy trouble-shooting and an machine uptime. And what is more: no additional accessories are required to connect the individual components electrically and mechanically.

The REX12 exactly meets the technical and economic requirements of the machine construction industry. The single-channelled circuit protector is available in all standard fixed current ratings from 1 A to 10 A. The double-channelled devices are available in the fixed current ratings 1 A, 2 A, 3 A, 4 A and 6 A as well as in adjustable versions from 1 A to 10 A or 1 A to 4 A (Class2).

The devices with fixed ratings allow standard-compliant cable protection to EN60204-1 – even with small cable cross sections. On the other hand, the adjustable version helps reduce inventory levels.
At a glance

- **REX12** circuit protectors ensure space-saving and reliable protection of primary pulsed DC 24 V switch mode power supplies.
- No further accessories are required for the electrical and mechanical connection of the circuit protectors.
- The devices are available with fixed as well as with adjustable current ratings.
The REX system –
the power distribution

Power distribution

The REX12 power distribution concept has two main groups: In the same system, the user can easily realise not only the + DC 24 V distribution, but also the minus distribution 0 V (GND).

The new PM12-T distribution modules for the + DC 24 V distribution are mounted side by side with REX12T and electronic circuit protectors to be electrically connected with these. This increases the number of terminals, saves space and conventional distribution terminals are no longer required.

The 0 V potential is connected to the EM12-T supply module for GND and is then multiplied for DC 0 V (GND) by means of the PM12-T module. These components can also conveniently be connected and wired up. The distribution solution for DC 0 V is suitable for 40 A rated load. Rating of components is made easy for the design engineers. Complex design solutions to reduce cable cross sections from 10 mm² to 2.5 mm² are a thing of the past.
+ DC 24 V

PM12-T01-00-LOAD-20 A,
potential module, 10 terminals 2.5 mm²
1 x line entry, 9 x LOAD+

PM12-T02-00-LOAD-20 A,
potential module, 10 terminals 2.5 mm²
2 x line entry separate, 4 x LOAD+ each

0 V (GND)

EM12-T00-000-GND-40 A,
supply module, standard, GND – 0 V

EM12-T00-300-GND-40 A,
supply module, mid/right, GND – 0 V

PM12-T03-00-GND-20 A,
potential module, 10 terminals 2.5 mm²

At a glance

- +DC 24 V distribution and minus distribution 0 V (GND) all in the same system.
- The PM12-T distribution modules multiply the number of terminals while significantly reducing space requirements
The internal fail-safe element in the shape of a blade fuse is adjusted directly to the current rating of the corresponding circuit protector, thus ensuring ease of adjustment to the cable cross section.

This means that the current rating of the protector and the rating of the fail-safe element are identical.

Thus the REX12 rated 4 A holds a 4 A blade fuse to IEC 60127-4/2 and to UL248-14. Besides the UL508 listed approval and NEC Class 2, the REX12 exclusively meets the requirements of cable protection to EN60204-1.

Apart from UL508 and NEC Class2, the REX12 exclusively meets the requirements of cable protection to EN60204-1.
... or flexible adjustment via IO link, Modbus RTU or on the device

By means of the IO link Modbus RTU adjustment of the flexible solution becomes as simple as can be in the COM mode. Current ratings are manually parameterised in the standard mode. The user can very easily adjust the REX12D-TE—... electronic circuit protector to the corresponding load conditions of the application. This also helps significantly reduce storage costs.

Adjustment of:
current rating
- 1 A to 10 A,
- 1 A to 4 A (Class2)
and warning limit
- 50 % to 100 %
The combination of
- supply,
- overcurrent protection and
- power distribution
is convincing in its flexibility

The REX system – the application
The REX12 system offers unrivalled ease of side-by-side mounting which allows upgrades at a later date.

**Individual protectors can effortlessly be replaced.**
Just open the left and right connector arm of the circuit protector and remove the unit in question. Put in a new unit, close the connector arm, done!

The REX system combines »power supply«, »overcurrent protection« and »power distribution« directly on the symmetrical rail.

The REX system allows the customer to build up a very economic DC 24 V supply with a modular and cost-effective protection and distribution solution. Without any connection accessories and minimal wiring time.

Also with IO-Link and Modbus RTU connection

To view product animation please scan the QR code
# Product range

## REX system

<table>
<thead>
<tr>
<th>Type</th>
<th>EM12-T00-000-DC24V-40A</th>
<th>EM12-T01-001-DC24V-40A</th>
<th>EM12D-T00-000-DC24V-40A</th>
<th>EM12D-TMB-000-DC24V-40A</th>
<th>EM12-T00-100-LINE-40A</th>
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</tbody>
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### Operating voltage range $U_B$
- DC 24 V (18 ... 30 V)
- DC 0 V (0 ... 30 V)

### Trip curve
- time-current characteristics

### Current rating fixed $I_N$
- single channel: 1 A, 2 A, 3 A, 4 A, 6 A, 8 A, 10 A

### Current rating fixed $I_N$
- double channel: 1 A/1 A, 2 A/2 A, 3 A/3 A, 4 A/4 A, 6 A/6 A

### Current rating variable $I_N$
- double channel: 1 A ... 10 A

### Fail-safe element
- = rated current (4 A electronic circuit = 4 A blade fuse)
- = adjusted to the highest rating

### Warning limit
- 90 % of $I_N$
- variable 50 % ... 100 % of $I_N$

### Capacitive load
- 20,000 µF

### Total current
- 40 A
- 20 A

### Signalling
- multi-coloured LED
- auxiliary contact

### Communication
- IO link
- Modbus RTU

### Temperature range
- -25 °C ... +60 °C

### space requirement per module
- 12.5 mm

### Termination
- push-in

### Mounting method
- DIN rail mounting

### Approvals
- UL2367
- UL508 listed
- UL1310, NEC Class2
- UL1059 (terminals)

### Number of devices to be mounted with EM12
- 16 modules REX12
- 16 modules REX12
- 16 channels REX12
- 16 channels REX12

### Modules that can be combined
- 
- 
- 
- 

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<table>
<thead>
<tr>
<th>Module Code</th>
<th>Description</th>
<th>Features</th>
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<tbody>
<tr>
<td>REX12-TA1-107-DC24V-xA</td>
<td>8 A and 10 A</td>
<td>4 A and 10 A</td>
</tr>
<tr>
<td>REX12-TA2-107-DC24V-xA/ xA</td>
<td>8 A and 10 A</td>
<td>4 A and 10 A</td>
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<tr>
<td>REX12D-TA1-100-DC24V-xA</td>
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<td>4 A and 10 A</td>
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<tr>
<td>REX12D-TE2-100-DC24V-1A-10A</td>
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<td>REX12D-TE2-100-DC24V-1A-4A-CL2</td>
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**Operating voltage range:**
- DC 24 V (18 ... 30 V)
- DC 0 V (0 ... 30 V)

**Trip curve / time-current characteristics**

**Current rating fixed IN**
- Single channel: 1 A, 2 A, 3 A, 4 A, 6 A, 8 A, 10 A
- Double channel: 1 A/1 A, 2 A/2 A, 3 A/3 A, 4 A/4 A, 6 A/6 A
  - 8 A and 10 A

**Current rating fixed IN**
- Double channel: 1 A ... 10 A
- Double channel: 1 A ... 4 A (Class 2)

**Fail-safe element**
- Rated current
- Adjusted to the highest rating

**Warning limit**
- 90 % of IN
- Variable: 50 % ... 100 % of IN

**Capacitive load**
- 20,000 µF

**Total current**
- 40 A
- 20 A

**Signalling**
- Multi-coloured LED
- Auxiliary contact

**Communication**
- IO link
- Modbus RTU

**Temperature range**
- -25 °C ... +60 °C

**Space requirement**
- Per module: 12.5 mm

**Termination push-in**

**Mounting method**
- DIN rail mounting

**Approvals**
- UL2367
- UL508 listed
- UL1310, NEC Class 2
- UL1059 (terminals)

**Number of devices to be mounted with EM12**
- 16 modules

**Modules that can be combined**
- 16 modules
- 16 channels

**Up to 4A (Class 2)**
- Up to 4A (Class 2)
- Up to 4A (Class 2)
- Up to 4A (Class 2)
Industry 4.0 with the REX system: condition monitoring – predictive maintenance

E-T-A’s intelligent REX system offers

- overcurrent protection
- power distribution of load circuits
- monitoring
- parameterisation
- communication via IO link and Modbus RTU

The EM12D-T supply module transmits a variety of diagnostic information to the superordinate control unit, including input voltage, load voltage, load current, limit values and various adjustment options of the circuit protector such as rated current limit value.

The pre-set software and visualisation components ControlPlex® Tools for EM12D-T and REX12D-T save time and costs when being included in the control level.